



**Fisheries Independent Surveys System
Survey Inventory
(FINSS-SI)**

Public User's Manual

**National Marine Fisheries Service
Office of Science and Technology
Science Information Division**

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1 Introduction

The purpose of the Fishery-Independent Surveys System (FINSS) is to 1) support the mission of the Fisheries and the Office of Science and Technology, 2) present the NMFS survey information to users, and 3) empower effective discovery, access and use of NMFS survey information. FINSS is a web based application designed to support the planning and budgeting processes, and to provide abilities to answer questions through web queries. Survey Inventory (SI) is one of the major components of FINSS that will initially provide survey data that were collected during the past few years prior to the current year. The Inventory will be updated at least once a year to keep the data up to date.

The Objectives of this system are:

- Develop a Survey Inventory that shows the history and breadth of NMFS fishery-independent observations across regions;
- Serve up trusted fishery-independent survey information and enable NMFS customers to easily find the information on the web with visualization;
- Respond to data calls and planning/budgeting scenarios;
- Establish definitions and standards for fishery-independent metadata repository;
- Develop policies and procedures for fishery-independent metadata collection, maintenance, updating and reporting in the national level system.

The FINSS product includes user interface and reporting capability for users to search and query the database. FINSS is sponsored by NMFS Office of Science and Technology (ST) Assessment and Monitoring Division, developed by the ST Science Information Division, and supported/contributed by the six NMFS Science Centers.

The system is structured in a hierarchical fashion. Proceeding from the top level down, the levels and some of the key parameters found under each is summarized as follows:

- Survey Level:
 - Survey Name
 - Science Center
 - Lab/Division
 - Survey Year
 - Survey Purpose
 - Funding Source
 - Targeted Species
- Cruise Level
 - Cruise Number
 - Cruise Start Date
 - Cruise End Date
 - Platform Type
 - Regional Ecosystem
 - Gear
 - Observation Parameters
- Station Level
 - Location Type (Point Station or Track-line)
 - Station ID
 - Lat/Lon

1.1 Basic Terminology

As a general guide, some of the basic terminology used in the Survey Inventory application is defined here.

Survey:	A descriptor of a series of similar cruises (same region, vessel type, target species, principal gear deployed, etc.).
Science Center:	One of the NMFS science centers (AFSC, NWFSC, SWFSC, PIFSC, NEFSC, or SEFSC)
Lab/Division:	Laboratory/division or facility which conducted the survey
Survey Year:	Calendar year when the survey was conducted
Survey Name:	Name defined by each science center
Survey Purpose:	Description of what the survey accomplished (e.g., stock assessment, seafloor mapping)
Survey Frequency:	How often the survey was conducted (e.g., annually, bi-annually, quarterly, by season)
Funding Source:	Source of funds (e.g., NOAA corporate fund, NMFS program fund, NMFS cooperative research fund)
Targeted Species:	Names of the species that were targeted from the Endangered Species Act (ESA) list, Marine Mammal Protection Act (MMPA) list, or Fish Stock Sustainability Index (FSSI) list
Cruise:	A trip composed of one or more legs on a single vessel
Cruise Number:	Cruise ID/code used to support each particular survey
Cruise Start Date:	Date the ship left port for a particular survey
Cruise End Date:	Date the ship returned to port after a particular survey
Platform Type:	Type of platform (e.g., NOAA research vessel, charter vessel)
Platform Name:	Name of vessel
Gear:	Sampling method/device used during a cruise

Location Type:	Category (point station or track-line) that best describes the location at which observations were made for the given survey and cruise
Station ID:	Station ID/code assigned by the Science Center to identify the stations
Begin Lat/Lon:	The Latitude/Longitude where a particular survey sampling activity started. For a “point station” location type, this is the only location value entered.
End Lat/Lon:	The end Latitude/Longitude that is filled in for a “track-line” location type

1.2 Scope for User's Manual

This Survey Inventory User's Manual is primarily focused on serving the Public User. Since the software interface is very intuitive, a fairly high level approach is used for illustrating its operation. The manual primarily deals with the basic mechanics of viewing and creating reports using the web application screens. Besides serving as a general reference, the manual can be used as training material for new users.

2 Survey Inventory Interface

The user interface for the public user is straight-forward and is limited to viewing the survey inventory data information. The user needs to select search parameters, initiate the search, and observe the survey related parameters.

There is also the capability to create tabular reports and map reports. In addition, new interactive reports functionality has been added allowing the user to filter or sort tabular reports and create charts from report data.

For the public user interface the application allows the user to:

- Perform survey search by supplying search parameters
 - Science Center
 - Survey Name
 - Survey Year
- View information for a selected survey at
 - Survey Level
 - Cruise Level
 - Station Level
- Generate a survey report
 - Tabular Reports
 - Map Reports
 - Interactive Reports

Additional details regarding the application capabilities and usage are covered in the following screens.

2.1 Access the Survey Inventory Application

For the public user operation, the user does not need a login or password. To access the Survey Inventory application, simply perform the following:

1. Select the Access Survey Inventory button from the public web page. This will produce the login screen shown in Figure 1.
2. Select the 'Visit as a Guest' button. No username or password is required.

FINSS-SI-Main

FINSS-SI Login

FINSS - Survey Inventory 1.0

This is a NOAA computer system. This computer system, including all related equipment, networks and network devices (specifically including Internet access), are provided only for authorized U.S. Government use. This system may be monitored for all lawful purposes, including to ensure that its use is authorized, for management of the system, to facilitate protection against unauthorized access, and to verify security procedures, survivability and operational security. Unauthorized use may subject you to criminal prosecution. Evidence of unauthorized use collected during monitoring may be used for administrative, criminal or adverse action. Use of this system constitutes consent to monitoring for these purposes.

Please enter your username and password below

Username:

Password:

to Login as a User

or Visit as a Guest

Done

Figure 1 – Login Screen for FINSS – Survey Inventory

After starting up the Survey Inventory application (with ‘Visit as a Guest’ operation), the initial screen shown in Figure 2 will be displayed.

Survey Inventory Records Survey Inventory Reports Public User Manual Log In

Survey Inventory Records

Search Criteria

Science Center:

Survey Name:

Survey Year: 2011

Search Reset

Survey Cruise Station

* indicates required fields

Science Center:*

Survey Name:*

Lab/Division/Facility:

Survey Frequency:

Survey Year:* 2011

Funding Source:* Select

Primary Purpose:* Select

Secondary Purpose: Select

Target Species

ESA: Select

MMPA: Select

FSSI: Select

Other Species: Add

Expected Species Categories: Select

Comments:
(Max 4000 Chars)
0 chars entered

Figure 2 – Initial Screen for Survey Inventory

2.2 Survey Search

This survey search operation is based on the assumption that you are currently working under the ‘Survey Inventory Records’ tab. If you are starting elsewhere, first select the ‘Survey Inventory Records’ button at the top of the screen.

Survey data in the Survey Inventory application is setup in a hierarchical structure consisting of Survey, Cruise, and Station. Initially, the user must supply a Search Criteria in the left panel of the screen. There are drop-down menus like the one illustrated in Figure 3 to assist the user.

The screenshot displays the 'Survey Inventory Records' application interface. On the left, the 'Search Criteria' panel is active, showing a list of search criteria: Science Center, Survey Name, Survey Year, and a 'See' button. A drop-down menu is open for the 'Science Center' field, listing options: AFSC, NEFSC, NWFS, PFSC, SEFSC, and SWFSC. The main panel on the right contains various search fields and buttons. A red asterisk indicates required fields. The fields include: Science Center (required), Survey Name (required), Lab/Division/Facility, Survey Frequency, Survey Year (required, set to 2011), Funding Source (required, with a 'Select' button), Primary Purpose (required, with a 'Select' button), Secondary Purpose (with a 'Select' button), Target Species (with a 'Select' button), ESA (with a 'Select' button), MMPA (with a 'Select' button), FSSI (with a 'Select' button), Other Species (with an 'Add' button), Expected Species Categories (with a 'Select' button), and Comments (with a 'Select' button). The bottom of the screen shows a taskbar with an Internet browser icon and a 100% zoom level.

Figure 3 – Drop-Down Menu for Search Criteria

To perform a search for a Survey, execute the steps covered in the next few pages:

1. Supply/select the search criteria for performing the search:

- Science Center
- Survey Name
- Survey Year

A sample search setup screen is shown in Figure 4. For this example a search will be performed for all surveys conducted by NEFSC for the 2007 survey year.

The screenshot displays the 'Survey Inventory Records' search setup interface. On the left, a sidebar titled 'Search Criteria' contains fields for 'Science Center' (set to 'NEFSC'), 'Survey Name', and 'Survey Year' (set to '2007'), along with 'Search' and 'Reset' buttons. The main panel, titled 'Survey', includes a red asterisk legend indicating required fields. It features several search filters: 'Science Center' (dropdown), 'Survey Name' (text input), 'Lab/Division/Facility' (text input), 'Survey Frequency' (dropdown), and 'Survey Year' (dropdown set to '2011'). Below these are 'Funding Source', 'Primary Purpose', and 'Secondary Purpose', each with a 'Select' button. The 'Target Species' section includes 'ESA', 'MMPA', and 'FSSI' (each with a 'Select' button) and 'Other Species' (with an 'Add' button). The 'Expected Species Categories' section has a 'Select' button. At the bottom, the 'Comments' section shows '(Max 4000 Chars)' and '0 chars entered' next to a text area.

Figure 4 – Sample Search Setup Screen

2. Select the Search button in the left panel to initiate the search.

The results for this search are displayed in the left panel. An example showing the results from the survey search is illustrated in Figure 5.

The screenshot displays the 'Survey Inventory Records' search interface. On the left, the 'Search Criteria' section shows 'Science Center' set to 'NEFSC' and 'Survey Year' set to '2007'. Below this, a table lists 16 records found. The table has columns for 'Select', 'Survey Name', 'Year', and 'Science Center'. The records include various survey types such as 'Benthic Habitat Study', 'Cooperative Research Survey', 'Ecosystems Survey', 'Marine Mammal Survey', 'Massachusetts DMF Bottom Trawl Survey', 'NMFS Acoustics Survey', 'NMFS NEFSC Bottom Trawl Survey', 'NMFS NEFSC Miscellaneous Bottom Trawl Survey', and 'NMFS NEFSC Sea Scallop Survey'. On the right, the 'Survey' form contains fields for 'Science Center', 'Survey Name', 'Lab/Division/Facility', 'Survey Frequency', and 'Survey Year'. Below these are sections for 'Funding Source', 'Primary Purpose', 'Secondary Purpose', 'Target Species' (with fields for ESA, MMPA, FSSI, and Other Species), 'Expected Species Categories', and a 'Comments' section with a character count.

Select	Survey Name	Year	Science Center
<input type="checkbox"/>	BENTHIC HABITAT STUDY_Spring	2007	NEFSC
<input type="checkbox"/>	BENTHIC HABITAT STUDY_Summer	2007	NEFSC
<input type="checkbox"/>	COOPERATIVE RESEARCH SURVEY - IBS COD	2007	NEFSC
<input type="checkbox"/>	ECOSYSTEMS SURVEY_Fall	2007	NEFSC
<input type="checkbox"/>	ECOSYSTEMS SURVEY_Spring	2007	NEFSC
<input type="checkbox"/>	ECOSYSTEMS SURVEY_Summer	2007	NEFSC
<input type="checkbox"/>	ECOSYSTEMS SURVEY_Winter	2007	NEFSC
<input type="checkbox"/>	MARINE MAMMAL SURVEY_Spring	2007	NEFSC
<input type="checkbox"/>	MARINE MAMMAL SURVEY_Summer	2007	NEFSC
<input type="checkbox"/>	MASSACHUSETTS DMF BOTTOM TRAWL SURVEY	2007	NEFSC
<input type="checkbox"/>	NMFS ACOUSTICS SURVEY_Fall	2007	NEFSC
<input type="checkbox"/>	NMFS NEFSC BOTTOM TRAWL SURVEY_Fall	2007	NEFSC
<input type="checkbox"/>	NMFS NEFSC BOTTOM TRAWL SURVEY_Spring	2007	NEFSC
<input type="checkbox"/>	NMFS NEFSC MISCELLANEOUS BOTTOM TRAWL SURVEY	2007	NEFSC
<input type="checkbox"/>	NMFS NEFSC SEA SCALLOP SURVEY	2007	NEFSC

Figure 5 – Sample Survey Search Results

2.3 View Survey Screen Data

To view survey screen data, select the survey from the set of records in the left panel following the search operation.

Simply select the icon in the far left column that is next to the Survey Name of interest. The Survey parameters are then filled out in the right panel (under the 'Survey' tab). Figure 6 shows the filled out form resulting from this selection. Note that for the Public login, the user may only view survey parameters.

The screenshot displays the 'Survey Inventory Records' application interface. On the left, a search criteria panel shows 'Science Center: NEFSC' and 'Survey Year: 2007'. Below this, a table lists 16 records. The second record, 'BENTHIC HABITAT STUDY_Summer', is selected, indicated by a red box and an arrow pointing to its icon. The right panel, titled 'Survey', shows the details for this selected survey. It includes fields for Science Center, Survey Name, Lab/Division/Facility, Survey Frequency, and Survey Year. Below these are sections for Funding Source, Primary Purpose, Secondary Purpose, Target Species (ESA, MMPA, FSSI, Other), Expected Species Categories, and a Comments field.

Select	Survey Name	Year	Science Center
	BENTHIC HABITAT STUDY_Spring	2007	NEFSC
	BENTHIC HABITAT STUDY_Summer	2007	NEFSC
	COOPERATIVE RESEARCH SURVEY - IBS COD	2007	NEFSC
	ECOSYSTEMS SURVEY_Fall	2007	NEFSC
	ECOSYSTEMS SURVEY_Spring	2007	NEFSC
	ECOSYSTEMS SURVEY_Summer	2007	NEFSC
	ECOSYSTEMS SURVEY_Winter	2007	NEFSC
	MARINE MAMMAL SURVEY_Spring	2007	NEFSC
	MARINE MAMMAL SURVEY_Summer	2007	NEFSC
	MASSACHUSETTS DMF BOTTOM TRAWL SURVEY	2007	NEFSC
	NMFS ACOUSTICS SURVEY_Fall	2007	NEFSC
	NMFS NEFSC BOTTOM TRAWL SURVEY_Fall	2007	NEFSC
	NMFS NEFSC BOTTOM TRAWL SURVEY_Spring	2007	NEFSC
	NMFS NEFSC MISCELLANEOUS BOTTOM TRAWL SURVEY	2007	NEFSC
	NMFS NEFSC SEA SCALLOP SURVEY	2007	NEFSC

Survey Details:

* indicates required fields

Science Center:* NEFSC
 Survey Name:* BENTHIC HABITAT STUDY_Summer
 Lab/Division/Facility: Environmental Processes Division
 Survey Frequency: BIENNIAL
 Survey Year:* 2007

Funding Source:* 1. NMFS program fund [Select]
 Primary Purpose:* 1. Habitat Assessment [Select]
 Secondary Purpose: 1. EFH Assessment [Select]

Target Species

ESA: [Select]
 MMPA: [Select]
 FSSI: [Select]
 Other Species: [Add]

Expected Species Categories:
 1. Fishes-Benthic Fish
 2. Invertebrate-Benthic [Select]

Comments:
 (Max 4000 Chars)
 0 chars entered

Figure 6 – Selected Survey

2.4 View Cruise Screen Data

Select the Cruise tab to observe the cruise related parameters for the selected survey.

The data for this particular case are shown in Figure 7. Note that there is only the one entry under Cruise List. For cases where there are two or more entries, the user may select a cruise from the Cruise List.

The screenshot displays the 'Survey Inventory Records' application with the 'Cruise' tab selected. On the left, the 'Search Criteria' section shows 'Science Center' set to 'NEFSC' and 'Survey Year' set to '2007'. Below this, a table lists 16 records. The second record, 'BENTHIC HABITAT STUDY_Summer', is highlighted. The main panel on the right shows the detailed information for this selected survey, including a 'Cruise List' with one entry, '200712'. The 'Cruise Information' section contains various fields: 'Cruise Number' (200712), 'Cruise Start Date' (08/16/2007), 'Cruise End Date' (08/25/2007), 'Days at Sea' (10), 'Platform Type' (Fishery Survey Vessel (FSV)), 'Select a Vessel' (Albatross IV), and 'Regional Ecosystem' (Northeast Shelf). It also lists 'Gear' (36 Yankee Trawl) and 'Oceanographic' parameters (Physical, Biological, Chemical, Biological, Fish, Invertebrate).

Select	Survey Name	Year	Science Center
<input type="checkbox"/>	BENTHIC HABITAT STUDY_Spring	2007	NEFSC
<input checked="" type="checkbox"/>	BENTHIC HABITAT STUDY_Summer	2007	NEFSC
<input type="checkbox"/>	COOPERATIVE RESEARCH SURVEY - IBS COD	2007	NEFSC
<input type="checkbox"/>	ECOSYSTEMS SURVEY_Fall	2007	NEFSC
<input type="checkbox"/>	ECOSYSTEMS SURVEY_Spring	2007	NEFSC
<input type="checkbox"/>	ECOSYSTEMS SURVEY_Summer	2007	NEFSC
<input type="checkbox"/>	ECOSYSTEMS SURVEY_Winter	2007	NEFSC
<input type="checkbox"/>	MARINE MAMMAL SURVEY_Spring	2007	NEFSC
<input type="checkbox"/>	MARINE MAMMAL SURVEY_Summer	2007	NEFSC
<input type="checkbox"/>	MASSACHUSETTS DMF BOTTOM TRAWL SURVEY	2007	NEFSC
<input type="checkbox"/>	NMFS ACOUSTICS SURVEY_Fall	2007	NEFSC
<input type="checkbox"/>	NMFS NEFSC BOTTOM TRAWL SURVEY_Fall	2007	NEFSC
<input type="checkbox"/>	NMFS NEFSC BOTTOM TRAWL SURVEY_Spring	2007	NEFSC
<input type="checkbox"/>	NMFS NEFSC BOTTOM TRAWL SURVEY_Summer	2007	NEFSC
<input type="checkbox"/>	NMFS NEFSC MISCELLANEOUS BOTTOM TRAWL SURVEY	2007	NEFSC
<input type="checkbox"/>	NMFS NEFSC SEA SCALLOP	2007	NEFSC

Found 16 Records

Survey Name: BENTHIC HABITAT STUDY_Summer

Cruise List

1. [200712](#)

* Indicates required fields

Cruise Number: 200712

Cruise Start Date: 08/16/2007 (mm/dd/yyyy)

Cruise End Date: 08/25/2007 (mm/dd/yyyy)

Days at Sea: 10 If left blank, the system will calculate it.

Platform Type: Fishery Survey Vessel (FSV)

Select a Vessel: Albatross IV

or Add a Vessel:

Regional Ecosystem

Ecosystem: 1. Northeast Shelf

Gear

Gear: 1. 36 Yankee Trawl

Oceanographic

Physical:

- 1. Air Pressure: Sea Surface
- 2. Air Temperature: Surface
- 3. Beaufort Sea State Scale (wind Speed, visibility)
- 4. Depth
- 5. Ocean Waves: Height
- 6. Salinity: Surface
- 7. Weather Condition
- 8. Wind: Surface, Direction
- 9. Wind: Surface, Speed

Biological:

Chemical:

Biological

Fish:

- 1. Age
- 2. Gender
- 3. Length/Morphometrics
- 4. Maturity
- 5. Number or Counts
- 6. Species
- 7. Stomach (Content, Volume, Weight)
- 8. Weight

Invertebrate:

- 1. Age
- 2. Gender
- 3. Length/Morphometrics

Figure 7 – Cruise Information for the Selected Survey

2.5 View Station Screen Data

Select the Station tab to observe the Station data for the selected survey.

The Station information for this selected survey is illustrated in Figure 8. In this case the Location Type is Track-Line where both Begin Lat/Lon and End Lat/Lon values are listed out for the stations.

The screenshot shows the 'Survey Inventory Records' application. The 'Station' tab is selected, indicated by a red arrow. The 'Survey Name' is 'BENTHIC HABITAT STUDY_Summer' and the 'Cruise' is '200712'. A link 'Template to prepare Station Location Data' is visible. The 'Cruise List' shows '1. 200712'. The main table displays station data for the selected survey.

Station ID	Location Type	Begin Lat	Begin Lon	End Lat	End Lon
15	Track-Line	39.407263	-72.897183	39.400375	-72.871687
20	Track-Line	40.673038	-70.211822	40.684327	-70.18819
24	Track-Line	40.694293	-70.248058	40.700168	-70.221165
61	Track-Line	41.48737	-66.773202	41.490595	-66.800942
6	Track-Line	39.3665	-72.922718	39.355572	-72.900202
11	Track-Line	39.386197	-72.865978	39.37387	-72.843278
5	Track-Line	39.372867	-72.919865	39.361698	-72.897687
7	Track-Line	39.387258	-72.88515	39.373503	-72.864385
8	Track-Line	39.391057	-72.879075	39.376795	-72.858485
9	Track-Line	39.385182	-72.886627	39.371803	-72.863532
10	Track-Line	39.388835	-72.863193	39.377103	-72.839392
12	Track-Line	39.389935	-72.861113	39.378265	-72.837767
13	Track-Line	39.410785	-72.904923	39.404322	-72.880205
14	Track-Line	39.413922	-72.899417	39.406355	-72.874007
16	Track-Line	39.673053	-72.439925	39.667655	-72.43038
17	Track-Line	39.661995	-72.402085	39.66284	-72.415388
18	Track-Line	40.681125	-70.205195	40.692742	-70.182385
19	Track-Line	40.682265	-70.209037	40.693937	-70.184287
21	Track-Line	40.696918	-70.246493	40.703243	-70.220728
22	Track-Line	40.698085	-70.243825	40.703472	-70.218323
25	Track-Line	40.721967	-70.19897	40.711848	-70.174467
26	Track-Line	40.721467	-70.204688	40.71121	-70.179417
35	Track-Line	41.359277	-69.171028	41.340513	-69.159115
36	Track-Line	41.356023	-69.178872	41.33768	-69.166217
37	Track-Line	41.366505	-69.183888	41.347072	-69.172657
39	Track-Line	41.335738	-69.13202	41.316565	-69.119693

Figure 8 – Station Information for the Selected Survey

Another example for Station information for a selected survey is shown in Figure 9. In this particular case the Location Type is Point where only Begin Lat/Lon values are listed for the stations.

The screenshot displays the 'Survey Inventory Records' web application. The 'Station' tab is selected, showing details for the 'CalCOFI_Summer' survey (Cruise: 0607NH). The interface includes a search criteria panel on the left, a list of 15 records, and a detailed station data table on the right.

Search Criteria:
 Science Center: SWFSC
 Survey Name:
 Survey Year: 2006
 Search Reset

Found 15 Records

Select	Survey Name	Year	Science Center
<input type="checkbox"/>	CalCOFI_Fall	2006	SWFSC
<input type="checkbox"/>	CalCOFI_Spring	2006	SWFSC
<input checked="" type="checkbox"/>	CalCOFI_Summer	2006	SWFSC
<input type="checkbox"/>	EFH juvenile rockfish	2006	SWFSC
<input type="checkbox"/>	Juvenile Rockfish	2006	SWFSC
<input type="checkbox"/>	Mako, Blue Fin Juvenile Shark	2006	SWFSC
<input type="checkbox"/>	PacOOS - Cent CA (MBARI)	2006	SWFSC
<input type="checkbox"/>	PacOOS - North CA (HSU)	2006	SWFSC
<input type="checkbox"/>	STAR - Stenela Abundance Research (Ship 1/Ship 2)	2006	SWFSC
<input type="checkbox"/>	STAR-LITE - Stenela Abundance Research Line Transect and Ecosystem	2006	SWFSC
<input type="checkbox"/>	Sardine (northern portion)	2006	SWFSC
<input type="checkbox"/>	Sardine (southern portion)	2006	SWFSC
<input type="checkbox"/>	Thresher Shark	2006	SWFSC
<input type="checkbox"/>	U.S. AMLR Program	2006	SWFSC
<input type="checkbox"/>	White Abalone	2006	SWFSC

Found 15 Records

Station Information for CalCOFI_Summer (Cruise: 0607NH)

Station ID	Location Type	Begin Lat	Begin Lon	End Lat	End Lon
	Point	32.58055556	-122.8194444		
	Point	32.91666667	-122.1361111		
	Point	33.25555556	-121.4527778		
	Point	33.58333333	-120.7666667		
	Point	33.75	-120.4138889		
	Point	33.88611111	-120.1333333		
	Point	34.18611111	-119.5194444		
	Point	34.15555556	-121.1555556		
	Point	33.81666667	-121.8416667		
	Point	29.85277778	-123.5861111		
	Point	30.425	-124.0083333		
	Point	30.75277778	-123.3333333		
	Point	31.08333333	-122.6583333		
	Point	31.41666667	-121.9916667		
	Point	31.75	-121.3166667		
	Point	32.41666667	-119.9638889		
	Point	32.92222222	-118.9361111		
	Point	33.18611111	-118.3888889		
	Point	33.25277778	-118.25		
	Point	33.41666667	-117.9222222		
	Point	33.48333333	-117.7694444		
	Point	33.50833333	-117.7555556		
	Point	33.67222222	-118.0833333		
	Point	33.88333333	-118.4527778		
	Point	33.89444444	-118.4944444		
	Point	33.82777778	-118.6305556		

Figure 9 – Station Information for another Selected Survey Example

3 Survey Inventory Reports

To generate survey reports, first set up the Report Criteria by selecting parameters for:

- Survey Year
- Science Center
- Survey Name
- Funding Source
- Purpose

A sample setup (SEFSC 2007) is shown in Figure 10.

The screenshot displays a web-based interface for setting up survey reports. At the top, there are navigation tabs: "Survey Inventory Records", "Survey Inventory Reports" (which is active), "Public User Manual", and "Log In". Below the tabs is a section titled "Survey Inventory Reports". Underneath, there is a "Parameters" section with five dropdown menus:

- Year(s):** A dropdown menu with options: "** All Years **", 2004, 2005, 2006, 2007 (selected), 2008, 2009, and 2010.
- Science Center(s):** A dropdown menu with options: "** All Centers **", Alaska Fisheries Science Center, Northeast Fisheries Science Center, Northwest Fisheries Science Center, Pacific Islands Fisheries Science Center, Southeast Fisheries Science Center (selected), and Southwest Fisheries Science Center.
- Survey Name(s):** A dropdown menu with options: "** All Surveys **", Atlantic Stripped Bass Tagging_Winter, Fish assemblages of western and southwestern Puerto Rico, GULFSPAN_database, InShore Shark Longline, InShore Shark Longline_Spring, InShore Shark Longline_Winter, Longline Shark/Red Snapper_Summer, Mangrove_studies, and Marine Mammals Survey_Summer.
- Funding(s):** A dropdown menu with options: "** All Funding Sources **", Base Fund, Congressional Earmarks/Pass-through fund, Contract Fund, and Fund from External Agencies.
- Purpose(s):** A dropdown menu with options: "** All Purposes **", Animal Movements, Camp Support, Climate Observation, and Coral Reef Benthic Assessment.

At the bottom right of the parameters section is a button labeled "Generate Report".

Figure 10 - Setup for Survey Report

3.1 Tabular Report

To produce a tabular report, select the “Generate Report” button. This will create the sample report shown in Figure 11.

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Parameters

Tabular Report

Map Report

Interactive Report

Tabular Report

Click For Detail	Instance	Science Center ▲	Survey Name	Year	Purposes	Fundings
	185	SEFSC	Tortugas Ecological Reserve Survey_Summer	2007	Docuement Spawning Aggregations,MPA Assessment (protected diversity, abundance of marine life, protected structure, function)	NOAA Coral Reef Conservation Program
	189	SEFSC	SEAMAP Reef Fish Survey	2007	EFH Assessment,Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund
	135	SEFSC	Panama City Laboratory trap/video reef fish survey	2007	Habitat Assessment	NMFS program fund
	153	SEFSC	USVI Larval Fish Cruise Surveys_Spring	2007	Habitat Assessment,Larval Reef Fisheries Oceanography	NOAA Coral Reef Conservation Program
	122	SEFSC	Mesoamerican coral reef project	2007	Habitat Assessment,Larval Reef Fisheries Oceanography	NOAA Coral Reef Conservation Program
	147	SEFSC	NE Gulf of Mexico MPA Survey_Winter	2007	Habitat Assessment,MPA Assessment (protected diversity, abundance of marine life, protected structure, function)	NMFS program fund
	132	SEFSC	Pulley Ridge HAPC Fish and Coral Survey_Spring	2007	Habitat Assessment,MPA Assessment (protected diversity, abundance of marine life, protected structure, function)	NMFS program fund
	196	SEFSC	U.S. South Atlantic MPA Survey_Spring	2007	Habitat Assessment,MPA Assessment (protected diversity, abundance of marine life, protected structure, function)	NMFS program fund
	188	SEFSC	Fish assemblages of western and southwestern Puerto Rico	2007	Habitat Assessment,MPA Assessment (protected diversity, abundance of marine life, protected structure, function),Reef Fish and Coral Monitoring,Research	NOAA Coral Reef Conservation Program
	137	SEFSC	Reef fish Visual Census (RVC) Survey_Florida Keys_Spring	2007	Habitat Assessment,MPA Assessment (protected diversity, abundance of marine life, protected structure, function),Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund
	164	SEFSC	Saint Andrew Bay Juvenile Reef Fish Survey	2007	Habitat Assessment,Research	NMFS program fund
	181	SEFSC	SEAMAP Plankton_late summer	2007	Habitat Assessment,Research,Stock Assessment (population size, distribution, age profile, recruitment)	Congressional Earmarks/Pass-through fund,NMFS cooperative research fund,NMFS program fund
	190	SEFSC	SEAMAP Shrimp/Bottomfish Survey_Fall	2007	Habitat Assessment,Research,Stock Assessment (population size, distribution, age profile, recruitment)	Congressional Earmarks/Pass-through fund,NMFS cooperative research fund,NMFS program fund
	204	SEFSC	SEAMAP Shrimp/Bottomfish Survey_Summer	2007	Habitat Assessment,Research,Stock Assessment (population size, distribution, age profile, recruitment)	Congressional Earmarks/Pass-through fund,NMFS cooperative research fund,NMFS program fund
	111	SEFSC	SEAMAP Plankton_Spring	2007	Habitat Assessment,Research,Stock Assessment (population size, distribution, age profile, recruitment)	NMFS cooperative research fund,NMFS program fund

row(s) 1 - 15 of 25

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Figure 11 - Sample Tabular Report

To produce the Survey Instance Detail information for a particular instance, pick the icon in the left column next to the instance number. An example for Instance 204 is shown in Figure 12.

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	135	SEFSC	Panama City Laboratory trap/video reef fish survey	2007	Habitat Assessment	NMFS program fund
	153	SEFSC	USVI Larval Fish Cruise Surveys_Spring	2007	Habitat Assessment,Larval Reef Fisheries Oceanography	NOAA Coral Reef Conservation Program
	122	SEFSC	Mesoamerican coral reef project	2007	Habitat Assessment,Larval Reef Fisheries Oceanography	NOAA Coral Reef Conservation Program
	147	SEFSC	NE Gulf of Mexico MPA Survey_Winter	2007	Habitat Assessment,MPA Assessment (protected diversity, abundance of marine life, protected structure, function)	NMFS program fund
	132	SEFSC	Pulley Ridge HAPC Fish and Coral Survey_Spring	2007	Habitat Assessment,MPA Assessment (protected diversity, abundance of marine life, protected structure, function)	NMFS program fund
	196	SEFSC	U.S. South Atlantic MPA Survey_Spring	2007	Habitat Assessment,MPA Assessment (protected diversity, abundance of marine life, protected structure, function)	NMFS program fund
	188	SEFSC	Fish assemblages of western and southwestern Puerto Rico	2007	Habitat Assessment,MPA Assessment (protected diversity, abundance of marine life, protected structure, function),Reef Fish and Coral Monitoring,Research	NOAA Coral Reef Conservation Program
	137	SEFSC	Reef fish Visual Census (RVC) Survey_Florida Keys_Spring	2007	Habitat Assessment,MPA Assessment (protected diversity, abundance of marine life, protected structure, function),Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund
	164	SEFSC	Saint Andrew Bay Juvenile Reef Fish Survey	2007	Habitat Assessment,Research	NMFS program fund
	181	SEFSC	SEAMAP Plankton_late summer	2007	Habitat Assessment,Research,Stock Assessment (population size, distribution, age profile, recruitment)	Congressional Earmarks/Pass-through fund,NMFS cooperative research fund,NMFS program fund
	190	SEFSC	SEAMAP Shrimp/Bottomfish Survey_Fall	2007	Habitat Assessment,Research,Stock Assessment (population size, distribution, age profile, recruitment)	Congressional Earmarks/Pass-through fund,NMFS cooperative research fund,NMFS program fund
	204	SEFSC	SEAMAP Shrimp/Bottomfish Survey_Summer	2007	Habitat Assessment,Research,Stock Assessment (population size, distribution, age profile, recruitment)	Congressional Earmarks/Pass-through fund,NMFS cooperative research fund,NMFS program fund
	111	SEFSC	SEAMAP Plankton_Spring	2007	Habitat Assessment,Research,Stock Assessment (population size, distribution, age profile, recruitment)	NMFS cooperative research fund,NMFS program fund

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Survey Instance Detail

Survey Instance Id	Species Category	Year	Science Center	Management Act	Gear	Days At Sea	Stations Per Regional Ecosystem	Number Of Cruises	Observation Names
204	Invertebrate-Benthic,Fishes-Benthic Fish,Phytoplankton	2007	SEFSC	-	BONGO,Bottom Trawl,CTD,Grab Sampler,Human Observation,Plankton Gear	86	Gulf of Mexico: 407	9	Biological,Habitat,Oceanographic,Protected Species

1 - 1

Figure 12 - Survey Instance Detail

3.2 Map Report

To produce a map, select the 'Map Report' Tab on 'Tabular Report' page. After you zoom in closer, you should observe the sample Map Report from the supplied survey criteria (SEFSC 2007 in this example) shown in Figure 13.

There are multiple component overlays for this map. One is the Exclusive Economic Zone (EEZ) with an outline indicated for the region. Another component is the "heat map" display, which shows the observation density for the currently selected stations, calculated for a grid with a cell size of $\frac{1}{4}$ degree. These cells are color-coded using a range of colors indicated by the scale in the right panel, where the "temperature" is proportional to density.

The EEZ may be toggled on/off by checking or unchecking the box next to 'US EEZ'. Similarly, the heat map may be toggled by checking or unchecking the box for 'Survey stations within selected area'.

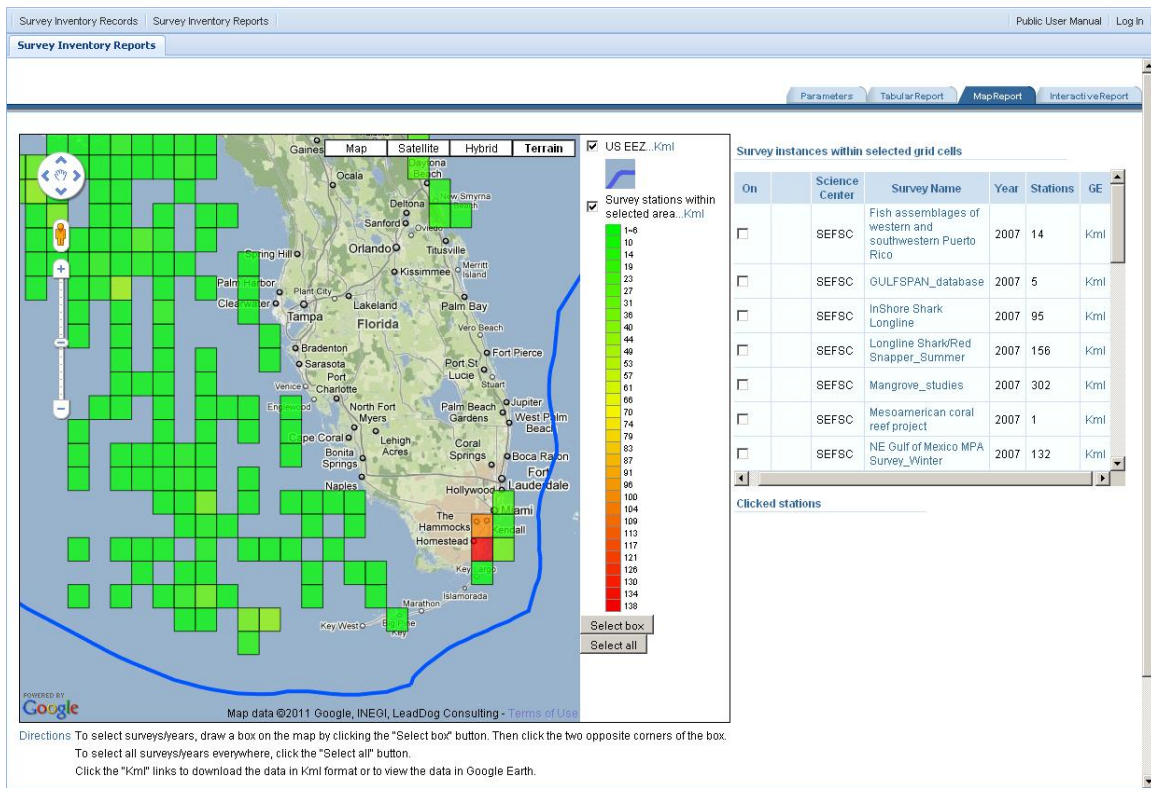


Figure 13 - Sample Map Report

To drill down for additional detailed station information, you may define an area of interest by drawing a box on the map. Only those surveys/stations within the box will be available as layers. If you want to return all survey instances that match your parameters, click the ‘Select All’ button.

The steps for creating a Select Box are:

- Click the ‘Select box’ button
- Click one corner of the box
- Click on the opposite corner of the desired box

An example is shown in Figure 14 where the first corner has been selected and a marker has been displayed on the map.

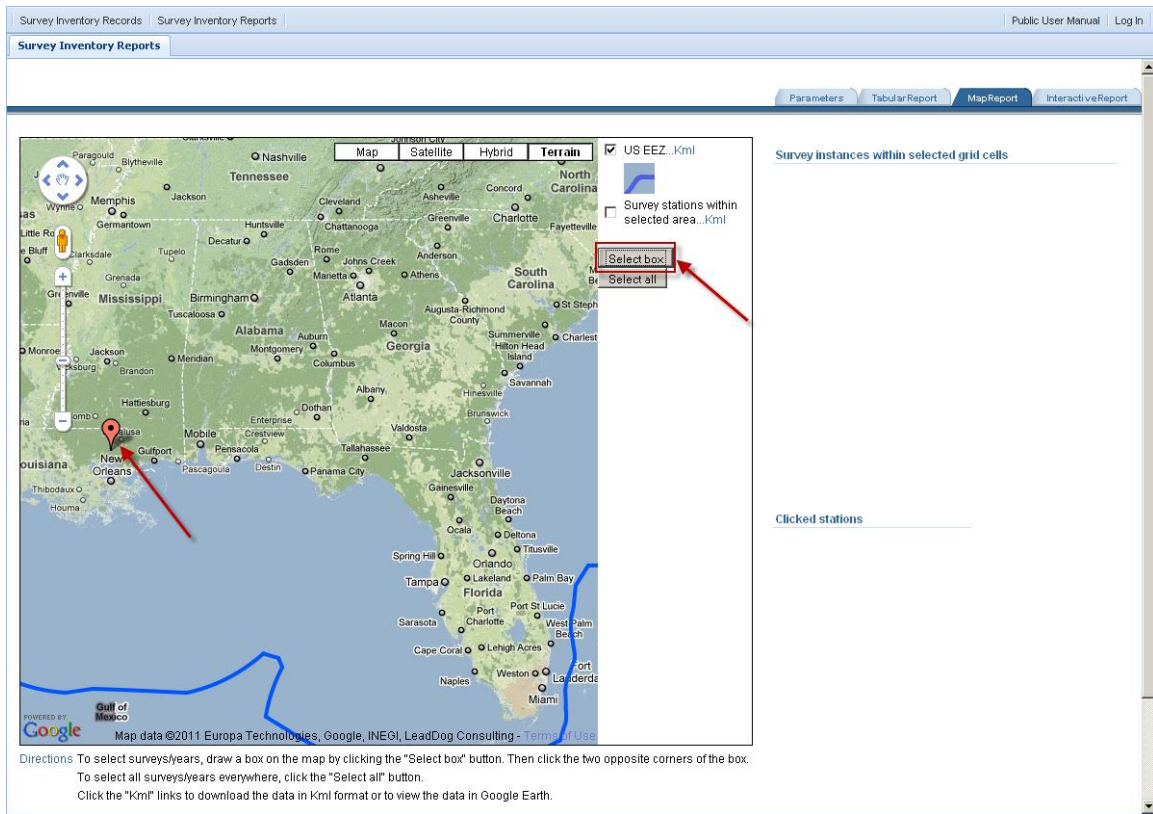


Figure 14 - Map: Setup for Select Box

After the second corner has been selected, the Select Box will be created as illustrated in the example shown in Figure 15. A table for the ‘Survey instances within selected grid cells’ is also displayed in the right panel.

The screenshot shows the 'Survey Inventory Reports' web application. The map displays the Southeastern United States, with a red selection box drawn in the Gulf of Mexico. The right panel shows a table titled 'Survey instances within selected grid cells'.

On	Science Center	Survey Name	Year	Stations	GE
<input type="checkbox"/>	SEFSC	InShore Shark Longline	2007	95	Kml
<input type="checkbox"/>	SEFSC	Longline Shark/Red Snapper_Summer	2007	20	Kml
<input type="checkbox"/>	SEFSC	SEAMAP Plankton_Spring	2007	3	Kml
<input type="checkbox"/>	SEFSC	SEAMAP Plankton_Winter	2007	16	Kml
<input type="checkbox"/>	SEFSC	SEAMAP Plankton_late summer	2007	37	Kml
<input type="checkbox"/>	SEFSC	SEAMAP Reef Fish Survey	2007	138	Kml
<input type="checkbox"/>	SEFSC	SEAMAP Shrimpl/Bottomfish Survey_Fall	2007	65	Kml
		SEAMAP			

Clicked stations

Directions: To select surveys/years, draw a box on the map by clicking the "Select box" button. Then click the two opposite corners of the box. To select all surveys/years everywhere, click the "Select all" button. Click the "Kml" links to download the data in Kml format or to view the data in Google Earth.

Figure 15 - Map: Select Box Defined

To turn on the stations for individual surveys/years (survey instances) pick on each check-box of interest under the 'On' column. Each survey instance that you turn on gets a different color as shown on the map and the corresponding table entry. You may display up to eight survey instances at one time. An example with four survey instances is shown in Figure 16.

To download the geospatial data for a survey instance in Kml format or to view the data in Google Earth, click on the 'Kml' link for the survey instance.

The screenshot shows the 'Survey Inventory Reports' web application. The map displays the Gulf of Mexico with a red selection box around a cluster of survey stations. The table on the right lists survey instances with columns for 'On', 'Science Center', 'Survey Name', 'Year', 'Stations', and 'GE'. The 'Clicked stations' section is empty.

On	Science Center	Survey Name	Year	Stations	GE
<input checked="" type="checkbox"/>	SEFSC	InShore Shark Longline	2007	95	Kml
<input type="checkbox"/>	SEFSC	Longline Shark/Red Snapper_Summer	2007	20	Kml
<input type="checkbox"/>	SEFSC	SEAMAP Plankton_Spring	2007	3	Kml
<input checked="" type="checkbox"/>	SEFSC	SEAMAP Plankton_Winter	2007	16	Kml
<input type="checkbox"/>	SEFSC	SEAMAP Plankton_late summer	2007	37	Kml
<input checked="" type="checkbox"/>	SEFSC	SEAMAP Reef Fish Survey	2007	138	Kml
<input checked="" type="checkbox"/>	SEFSC	SEAMAP Shrimp/Bottomfish Survey_Fall	2007	65	Kml
		SEAMAP			

Clicked stations

Figure 16 - Map: Survey Instances inside a Select Box

To show the Attributes of an individual station or stations, click on the station (or stations) on the map. The attributes of those stations will show up in the window on the right side of the screen and the selected stations will be highlighted on the map. If the station has a beginning and ending point (as in trawl), a black line will also be displayed connecting these two points. This feature helps users find out information about overlapping stations. An example for ‘SEAMAP Reef Fish Survey’ is illustrated in Figure 17.

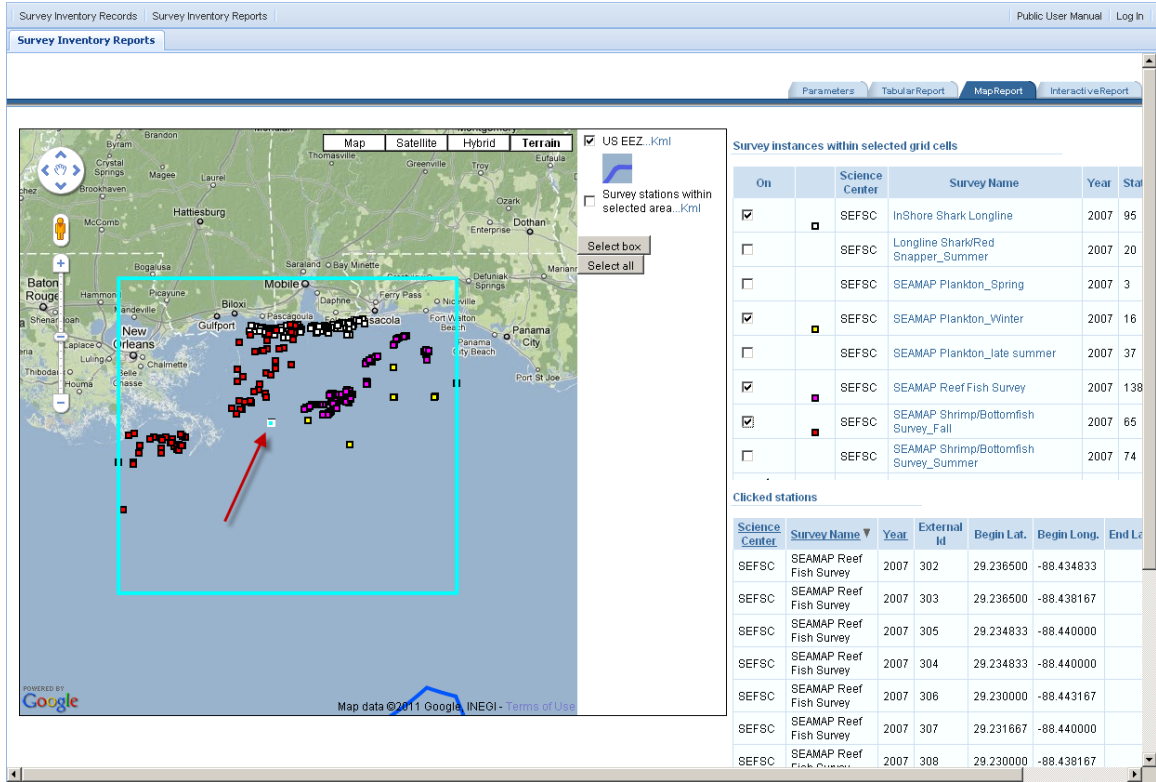


Figure 17 - Map: Display Attributes for Stations

Given a list of survey instances that meet your filter parameters, you have another program feature as follows. If you click on the survey name in the survey instance list, a summary of the survey's attributes will be displayed in a new window. Clicking on the survey name 'SEAMAP Reef Fish Survey' shown next to the map in Figure 17 will yield the summary information shown in Figure 18.

The screenshot shows a web browser window titled "FINSS-SI-Main" with a sub-tab "Survey Detail". The main content area displays the following information:

Survey

Survey Id: 146
 Science Center: SEFSC
 Survey Name: SEAMAP Reef Fish Survey
 Survey Description:
 Survey Effective Date:
 Survey End Date:

Contacts

First Name	Middle Name	Last Name	Phone	Phone Ext	Email
Lee	M.	Weinberger	3053614287 -		lee.weinberger@noaa.gov
Mark	B.	Mcduff	2287624591 178		mark.mcduff@noaa.gov

Survey Instance Detail

Survey Instance Id	Species Category	Year	Science Center	Management Act	Gear	Days At Sea	Stations Per Regional Ecosystem	Number Of Cruises	Observation Names
189	-	2007	SEFSC	FSSI	Video Arrays	78 Gulf of Mexico: 397	2	Biological,Habitat,Oceanographic,Protected Species	

The bottom status bar of the browser window shows "Done" and a lock icon.

Figure 18 - Map: Summary Information for Survey

In the above example, a Select Box was created to define an area of interest. Alternately, the Select All button could be used to return all survey instances that match your parameters. Follow the same steps as above: 1.) Turn on the stations for individual survey instances and 2.) Click on stations to show attributes. The resulting sample display is shown in Figure 19.

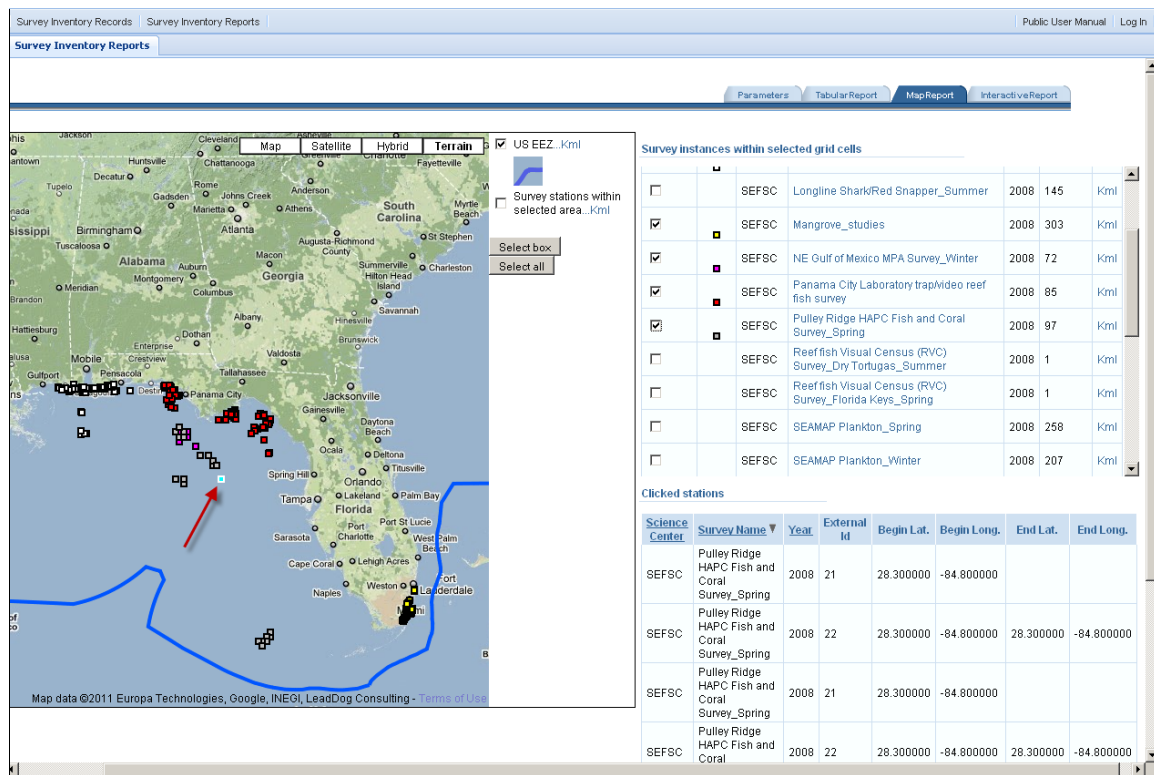


Figure 19 - Map: Show Station Attributes Example 2

3.3 Interactive Report

The FINSS – Survey Inventory application has additional capability to produce interactive reports. Select the ‘Interactive Report’ tab to bring up this feature. The tabular reports screen for Interactive Reports is shown in Figure 20.


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Interactive Report

 Rows

15

Go



Survey Instance Id	Science Center	Survey Name	Purposes	Fundings	Observation Names	Gears	Days At Sea	Survey Id	Survey Year	Stations Per Regional Ecosystem
452	SWFSC	STAR-LITE - Stenela Abundance Research Line Transect and Ecosystem	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	-	Acoustic Backscatter, BONGO, CTD, Human Observation, MANTA, Mid-water Trawl, Plankton Gear, Single Beam, Surface Trawl	100	297	2007	Eastern Tropical Pacific: 1
456	SWFSC	PacOOS - Cent CA (MBARI)	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	Biological, Oceanographic, Protected Species	BONGO, CTD, Human Observation, MANTA, Plankton Gear	4	176	2007	California Current: 9
460	SWFSC	Mako, Blue Fin Juvenile Shark	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	Biological, Habitat, Oceanographic	ADCP, Acoustic Backscatter, CTD, Human Observation, Longline, Side Scan, Tags (satellite, acoustic and others)	31	173	2007	California Current: 51
464	SWFSC	CalCOFI_Summer	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	-	Acoustic Backscatter, BONGO, CTD, Human Observation, MANTA, Plankton Gear, Single Beam, Sonar	17	160	2007	California Current: 73
465	SWFSC	CalCOFI_Fall	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	-	Acoustic Backscatter, BONGO, CTD, Human Observation, MANTA, Plankton Gear, Single Beam, Sonar	17	158	2007	California Current: 67
468	SWFSC	Sardine (northern portion)	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	-	Acoustic Backscatter, BONGO, CTD, Human Observation, MANTA, Mid-water Trawl, Plankton Gear, Single Beam, Sonar	6	179	2007	California Current: 14

Done

Figure 20 - Interactive Reports Screen

The Interactive Report feature allows the user to sort, filter, highlight, aggregate or chart results. The number of rows can be changed to alter the number of records displayed at a given time. Also, there is an option to select columns for the report.

To display a menu of interactive options, select the icon (cogwheel with down-arrow) at the top of the screen. The resulting drop-down menu of user options is illustrated in Figure 21.

The screenshot shows a web application interface for 'Survey Inventory Reports'. The 'Interactive Report' tab is selected. A search bar and a 'Rows' dropdown (set to 15) are at the top. A cogwheel icon with a down arrow is clicked, opening a menu with the following options: Select Columns, Filter, Sort, Control Break, Highlight, Compute, Aggregate, Chart, Flashback, Reset, Help, and Download. The background table displays survey data for various science centers and survey names.

Survey Instance Id	Science Center	Survey Name	Purposes	Station	Gears	Days At Sea	Survey Id	Survey Year	Stations Per Regional Ecosystem
452	SWFSC	STAR-LITE - Stenele Abundance Research Line Transect and Ecosystem	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)		Acoustic Backscatter, BONGO, CTD, Human Observation, MANTA, Mid-water Trawl, Plankton Gear, Single Beam, Surface Trawl	100	297	2007	Eastern Tropical Pacific: 1
456	SWFSC	PacOOS - Cent CA (MBAR)	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	c, Protected	BONGO, CTD, Human Observation, MANTA, Plankton Gear	4	176	2007	California Current: 9
460	SWFSC	Mako, Blue Fin Juvenile Shark	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	ographic	ADCP, Acoustic Backscatter, CTD, Human Observation, Longline, Side Scan, Tags (satellite, acoustic and others)	31	173	2007	California Current: 51
464	SWFSC	CalCOFI_Summer	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)		Acoustic Backscatter, BONGO, CTD, Human Observation, MANTA, Plankton Gear, Single Beam, Sonar	17	160	2007	California Current: 73
465	SWFSC	CalCOFI_Fall	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	Acoustic Backscatter, BONGO, CTD, Human Observation, MANTA, Plankton Gear, Single Beam, Sonar	17	158	2007	California Current: 67
468	SWFSC	Sardine (northern)	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	Acoustic Backscatter, BONGO, CTD, Human Observation, MANTA, Mid-water Trawl, Plankton Gear, Single Beam	6	179	2007	California Current: 14

Figure 21 - Interactive Reports Menu Options

As an illustration of one of the possible operations, a simple example is presented here showing the Filter option. In this case the list of survey instances is filtered for Survey Names containing 'rockfish'. The setup for this is illustrated in Figure 22. After the 'Apply' button is selected, the results shown in Figure 23 will be displayed.

The screenshot shows the 'Survey Inventory Reports' application window. The 'Interactive Report' tab is active. A search bar at the top has a magnifying glass icon, a text input field, a 'Rows' dropdown set to 15, a 'Go' button, and a refresh icon. Below this is a 'Filter' dialog box. The 'Filter' dialog has three fields: 'Column' (set to 'Survey Name'), 'Operator' (set to 'contains'), and 'Expression' (set to 'rockfish'). There are 'Cancel' and 'Apply' buttons at the bottom of the dialog. Below the dialog is a table with the following data:

Survey Instance Id	Science Center	Survey Name	Purposes	Fundings	Observation Names	Gears	Days At Sea	Survey Id	Survey Year	Stations Per Regional Ecosystem
452	SMFSC	STAR-LITE - Stenela Abundance Research Line Transect and Ecosystem	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	-	Acoustic Backscatter, BONGO, CTD, Human Observation, MANTA, Mid-water Trawl, Plankton Gear, Single Beam, Surface Trawl	100	297	2007	Eastern Tropical Pacific: 1
460	SMFSC	Mako, Blue Fin Juvenile Shark	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	Biological, Habitat, Oceanographic	ADCP, Acoustic Backscatter, CTD, Human Observation, Longline, Side Scan, Tags (satellite, acoustic and others)	31	173	2007	California Current: 51
468	SMFSC	Sardine (northern portion)	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	-	Acoustic Backscatter, BONGO, CTD, Human Observation, MANTA, Mid-water Trawl, Plankton Gear, Single Beam, Sonar	6	179	2007	California Current: 14
481	SMFSC	EFH juvenile rockfish	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	-	-	-	166	2007	-

The bottom of the window shows a 'Done' button and a status bar.

Figure 22 - Interactive Report Setup for Filter Operation

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Interactive Report

🔍 Rows: 15 Go ⚙️

📁 Survey Name contains 'rockfish' ☒ ☐

Survey Instance Id	Science Center	Survey Name	Purposes	Fundings	Observation Names	Gears	Days At Sea	Survey Id
508	SWFSC	Juvenile Rockfish	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	Biological, Habitat, Oceanographic, Protected Species	Acoustic Backscatter, BONGO, CTD, Human Observation, Mid-water Trawl, Plankton Gear	43	168
481	SWFSC	EFH juvenile rockfish	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	-	-	-	166
495	SWFSC	COAST - Southern CA Bight Rockfish (ROV)	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS cooperative research fund	Biological, Habitat, Oceanographic, Protected Species	Acoustic Backscatter, ROV, Single Beam	32	289
509	SWFSC	COAST - Southern CA Bight Rockfish (acoustics)	Integrated Ecosystem Assessment, Stock Assessment (population size, distribution, age profile, recruitment)	NMFS program fund	Biological, Habitat, Oceanographic	Acoustic Backscatter, CTD, Multibeam, Side Scan, Single Beam, Sonar	60	290

Done

Figure 23 - Interactive Report Sample Filter Results

Another basic example for Interactive Report illustrates the Chart feature. In this sample the number of days at sea is plotted for each survey instance in Figure 24.

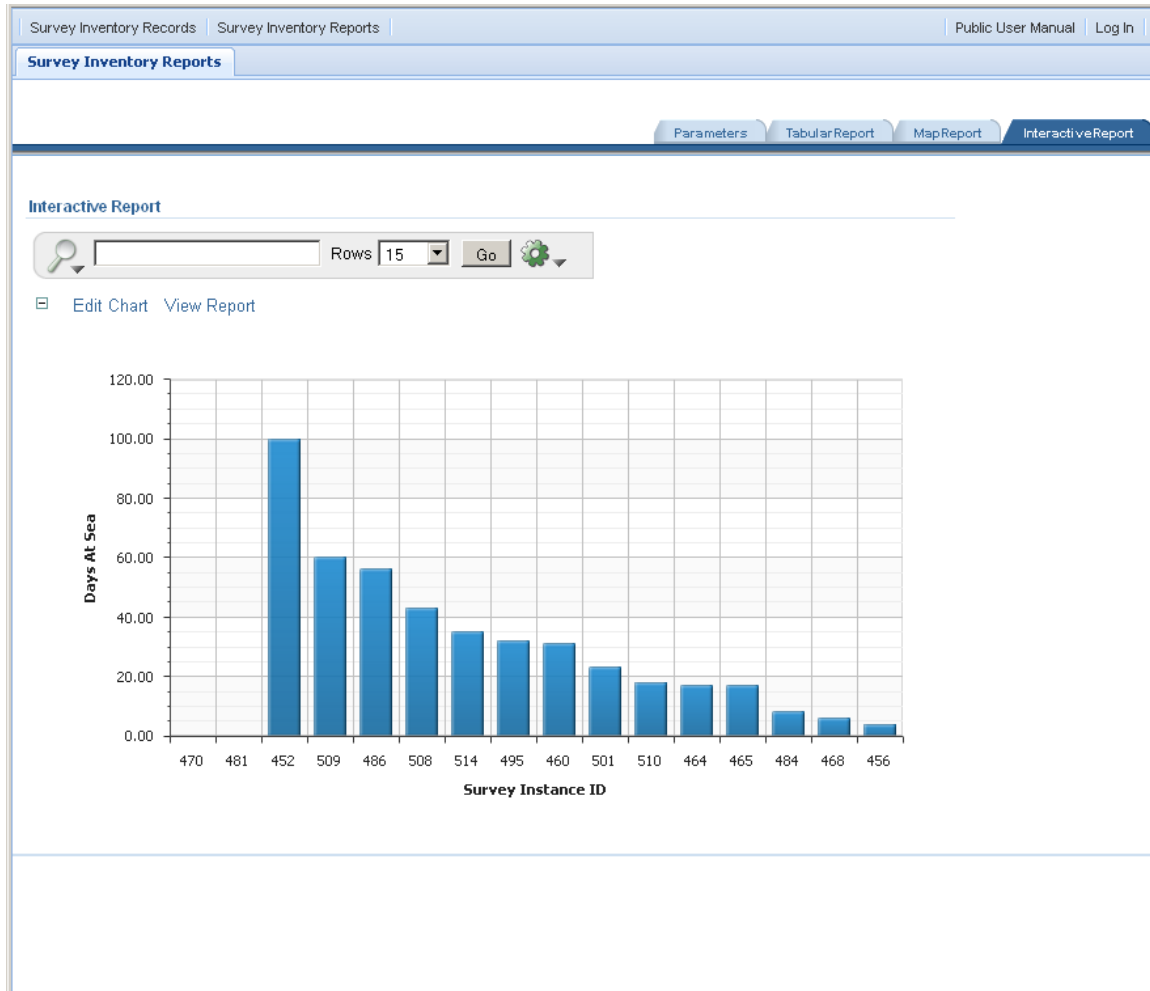


Figure 24 - Interactive Report Sample Chart